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## MIL-C-38999 Series I

## Mil-Spec Connectors & Accessories



## DEUTSCH ECD

### **Defense / Aerospace Operations...**

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**Deutsch ECD Defense Aerospace Operations** 

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# Cylindrical, High Density Bayonet Coupling Connector Qualified to MIL-C-38999 Series I

The Deutsch Series I version is a long shell, scoop-proof, bayonet coupling connector available in both environment resisting resilient and hermetic types. These Series I connectors are intermateable and interchangeable with all other MIL-C-38999 Series I connectors.

#### Dielectric withstanding voltage:

(Meets MIL-C-38999, paragraph 3.14) At sea level: 1800 volts AC (RMS) At 100,000 ft.: 200 volts AC (RMS)

#### Insulation resistance:

(Meets MIL-C-38999, paragraph 3.13) 5000 megohms min.at 25°

#### Thermal shock:

(Meets MIL-C-38999, paragraph 3.8) After cycling the connector between –65° C and +175° C, it will meet all applicable electrical and mechanical requirements.

#### Current rating:

 (Meets MIL-C-39029, paragraph 1.3.1)

 Contact Size
 Max. Amps

 22D
 5

 20
 7.5

 16
 13

#### Temperature:

(Meets MIL-C-38999, paragraph 3.11) Operative at temperatures from -65° C to +175° C.

#### **Durability:**

(Meets MIL-C-38999, paragraph 3.11) No electrical or mechanical defects after 500 cycles of engagement and disengagement.

#### Physical shock:

(Meets MIL-C-38999, paragraph 3.27) No loosening of parts, cracking or other deleterious results hindering further part operation after 300 G's in each of 3 mutually perpendicular planes.

#### Contact millivolt drop:

22D — 73 millivolts at 5.0 amps
 20 — 55 millivolts at 7.5 amps
 16 — 49 millivolts at 135.0 amps
 12 — 42 millivolts at 23.0 amps

#### Corrosion:

(Meets MIL-C-38999, paragraph 3.16) Meets appropriate electrical and mechanical requirements and shows no exposure of base metal after 500 hours of salt spray.

#### Vibration:

(Meets MIL-C-38999, paragraph 3.26)

#### Contact resistance at 25° C:

(Meets MIL-C-39029, paragraph 3.5.4) Contact & Test Current Wire Size (Amps) Drop (\*) 22D 5 73 20 7.5 55 49 16 13 12 42

#### Usable wire size:

(Meets MIL-C-39029, paragraph 3.4.3.1)
Contact Size Accepts (AWG)
22D 22-28
20 20-24
16 16-20

12&14

#### 12 Materials:

Shell — aluminum alloy. Pin contacts — copper alloy. Inserts — plastic; silicone.

#### Finish

Shell — O.D. cad over nickel. Contacts — gold over nickel.

#### Grommet sealing range:

(Meets MIL-C-39029, paragraph 3.4.3.1) Max. Wire Min. Wire Contact Size O.D. O.D. 22D 054 .030 20 .083 .040 16 .109 .065 12 .142 .097

#### Fluid compatibility:

(Meets MIL-C-38999, paragraph 3.33) Designed to function in all fluids encountered in any modern military or aerospace environment.

#### EMI shielding:

(Meets MIL-C-38999, paragraph 3.31)
Effective over a range of 100 MHz to 10
GHz with a minimum 50 dB effectiveness at 10 GHz

Frequency	Leakage attenuation
MHz	minimum (dB)
100	90
200	88
300	87
400	85
800	85
1,000	85
1,500	69
2,000	65
3,000	61
4,000	58
6,000	55
10,000	50

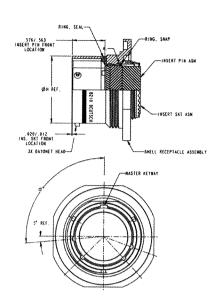
#### Fluid immersion:

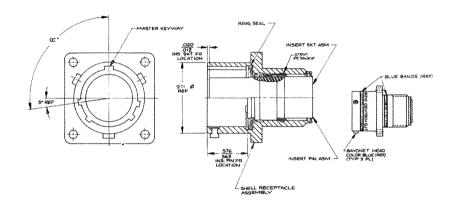
Fluid resistant to many fuels, coolants and solvents per MIL-C-38999.

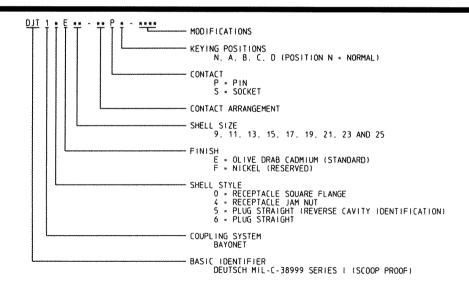


SHELL SIZE	H DIA. REF.
09	. 568
11	. 696
13	. 846
15	. 971
17	1,096
19	1.203
21	1.328
23	1.453
25	1.578

SHELL	KEY POSITION a						
SIZE	N	A	8	C	D		
09	95°	77°			113		
11	95°	81°	67°	123°	109°		
13	95°	75°	63°	127°	115°		
15	95°	74°	61°	129°	116°		
17	95°	77°	65°	125°	113°		
19	95°	770	65°	125°	113°		
21	95°	770	65°	125°	113°		
23	95°	80°	69°	1210	110°		
25	95°	80°	69°	1510	110°		

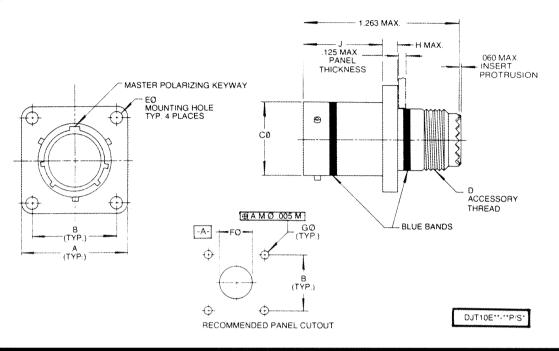




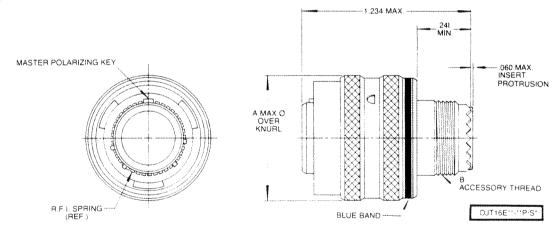




#### Receptacle Outline Dimensions



#### Plug Outline Dimensions



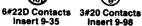
SHELL SIZE	A ± .020	B ± .005	CQ ± .003	D THREAD UNEF-2A	E <b>0</b> + .010 005	FØ MIN.	G <b>0</b> ± .005	H MAX.	J + .000 005	AØ MAX	B THREAD UNEF-2A
9	.938	.719	.570	.4375-28	.128	.516	.128	.100	.632	.859	.4375-28
11	1.031	.812	.698	.5625-24	.128	.664	.128	.100	632	.984	.5625-24
13	1.125	.906	.848	.6875-24	.128	.750	.128	.100	.632	1.156	.6875-24
15	1.219	.969	.973	.8125-20	.128	.906	.128	.100	.032	1.281	.8125-20
1.7	1.312	1.062	1.098	.9375-20	.128	1.016	.128	.100	.632	1.406	.9375-20
19	1.438	1.156	1.205	1.0625-18	.128	1.141	.128	.100	.632	1.516	1.0625-18
21	1.562	1.250	1.330	1.1875-18	.128	1.266	.128	.130	.602	1.641	1.1875-18
23	1.688	1.375	1.455	1.3125-18	.147	1.377	.154	130	.602	1.766	1.3125-18
25	1.812	1.500	1.580	1.4375-18	.147	1.484	.154	.130	.602	1.891	1.4375-18



## DJT Series Insert Arrangements

#### **Contact Arrangements**









Insert 11-5













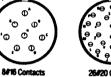


37#22D Contacts





Insert 17-6 Insert 17-8



26//20 Contacts



55#22D Contacts



11#16 Contacts







66#22D Contacts insert 19-35



Insert 21-11



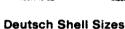
16#16 Contacts



41#20 Contacts Insert 21-41



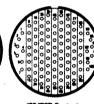
79#22D Contacts Insert 21-35



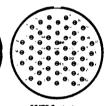
	DJT	Service Rating	Total Con- tacts	Contact Size			
	1191			22D	20	16	12
	9-35	M	- 6	6			
	9-98	1	3		3		
	11-5	1	5		5		
	11-35	M	13	13			T
	11-99	1	7		7		
	13-4	1	4			4	
	13-35	M	22	22			
1	13-98	1	10		10		
	15-5	11	5			5	
	15-18	1	18		18		
	15-35	M	37	37			
	15-97	1	12		8	4	
	17-6	I	6				6
	17-8	11	8			8	
	17-26	1	26		26		
I	17-35	M	55	55			
I	19-11	11	11			11	
I	19-32	1	32		32		
[	19-35	M	66	56			
[	21-11	-	11				11
[	21-16	Ħ	16			16	
l	21-41	ī	41		41		
L	21-35	M	79	79			
	23-21	14	21			21	
-[	23-53	1	53		53		
ĺ	23-55	1	55		55		
I	25-4	ı	58		48	8	
I	25-19		19				19
1	25-24		24			12	12
	25-29		29			29	
	25-35	M	128	128			
	25-61	1	61		61	-	



21#16 Contacts Insert 23-21



100#220 Contacts Insert 23-35



53#20 Contacts insert 23-53



55#20 Contacts Insert 23-55



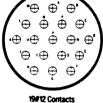
48#20 Contacts 8/16 Contacts

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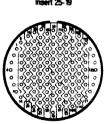
29/16 Contacts

insert 25-29

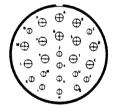
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19#12 Contacts Insert 25-19



128#22D Contacts insert 25-35



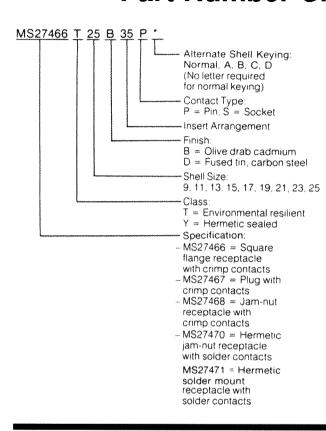
12#16 Contacts

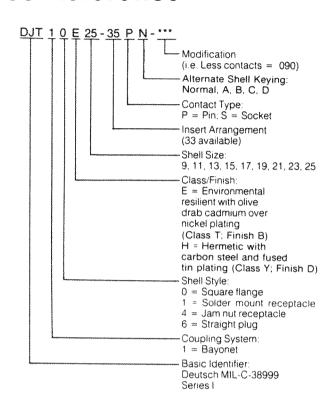


61#20 Contacts



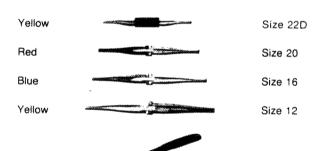
## Part Number Cross Reference





#### Assembly Tools

Wire/contact assembly tools are standard military type insertion/removal tools found in most assembly areas.





Contact Size	Insertion/ removal tool	Crimp tool	Crimp tool positioner	Sealing plug (Military P/N)
22D	M81969 14-01	M22520/7-01	M22520/7-07	MS27488-22
	MS3160-23		M22520-7/05	
20	M81969 14-02	M22520/1-01	M22520/1-04	MS27488-20
16	M81969 14-03	M22520/1-01	M22520/1-04	MS27488-15
12	M81969 14-04	M22520/1-01	M22520/1-04	MS27488-12

